FIG_1a

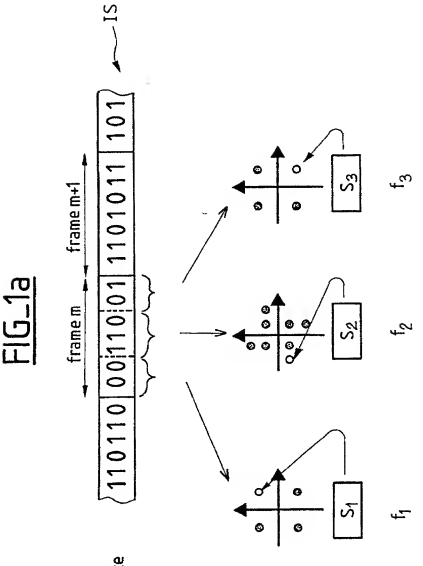

frame m
frame m+1
1S
110110 00 11 10 01 1101011 101
Information sequence
Symbol constellations
Transmitted on carrier:
S1
S2
S3
f1
f2
f3

FIG_1b

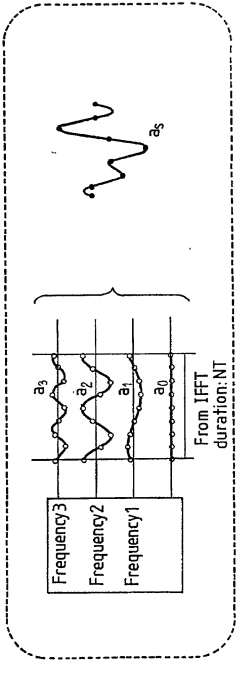
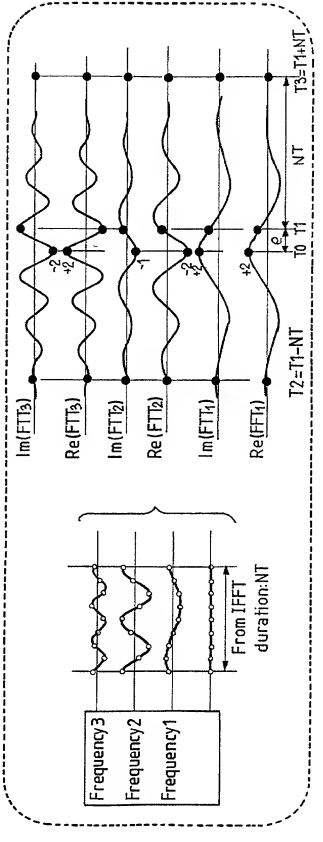

Frequency3
Frequency2
Frequency1
a_3
a_2
a_1
a_0
From IFFT
duration:NT
a_S

FIG_1c


Im(FFT3)
Re(FFT3)
Im(FFT2)
Re(FFT2)
Im(FFT1)
Re(FFT1)
-2
+2
-1
+2
-2
+2
+2
e
T0
T1
NT
T3=T1+NT
T2=T1-NT
Frequency3
Frequency2
Frequency1
From IFFT
duration:NT

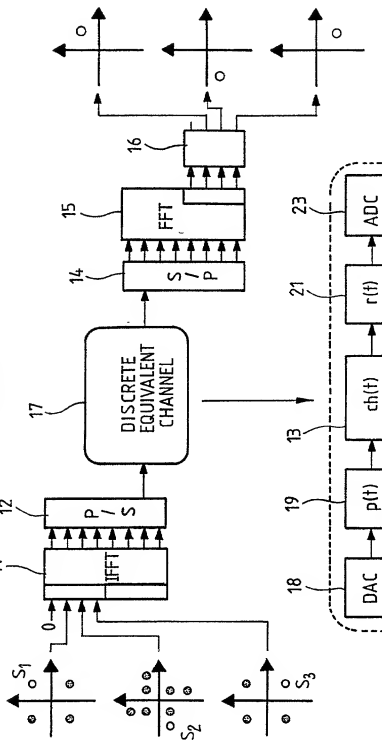
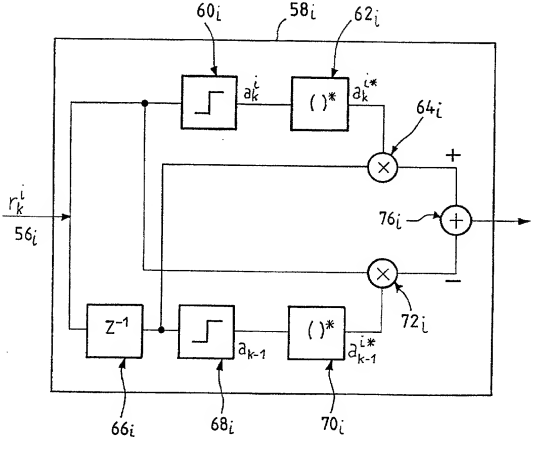

S1
S2
S3
0
11
IFFT
12
P / S
17
DISCRETE EQUIVALENT CHANNEL
14
S / P
15
FFT
16
18
DAC
Tx clock
19
p(t)
Tx filter
13
ch(t)
Channel
21
r(t)
Rx filter
23
ADC
Rx clock

FIG_2

FIG_2a

FIG_4



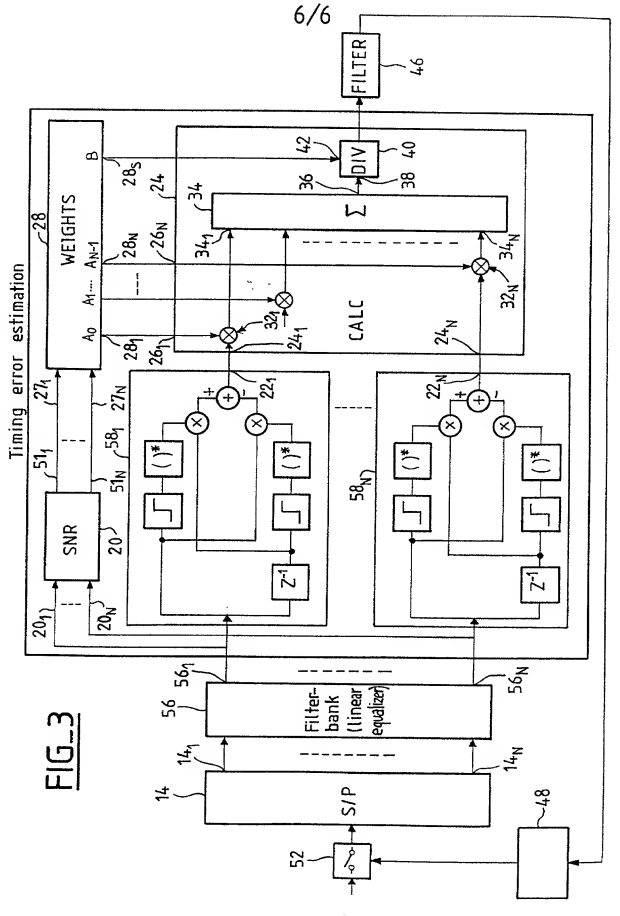

Timing error estimation
WEIGHTS
SNR
CALC
DIV
FILTER
S/P
Filter-bank (linear equalizer)
Z-1

FIG_3